Claims

1. A composition comprising:

an isolated nucleic acid molecule that encodes an immunogen; and

an isolated nucleic acid molecule that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.

2. The composition of claim 1 wherein said nucleic acid molecules are plasmids.

3. The composition of claim 1 wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

4. The composition of claim 3 wherein said immunogen is a pathogen antigen.

5. The composition of claim 4 wherein said immunogen is a herpes simplex antigen.

6. The composition of claim 5 wherein said herpes simplex antigen is HSV2gD.

7. A composition comprising an isolated nucleic acid molecule comprising a nucleotide sequence that encodes an immunogen; and a nucleotide sequence that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.

8. The composition of claim 7 wherein said nucleic acid molecule is a plasmid.

9. The composition of claim 7 wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

10. The composition of claim 9 wherein said immunogen is a pathogen antigen.

11. The composition of claim 10 wherein said immunogen is a herpes simplex antigen.

12. The composition of claim 11 wherein said herpes simplex antigen is HSV2gD.

13. An injectable pharmaceutical composition comprising the composition of claims 1-12.

14. A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a composition of claims 1-12.

15. A recombinant vaccine comprising a nucleotide sequence that encodes an immunogen operably linked to regulatory elements, a nucleotide sequence that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.

16. The recombinant vaccine of claim 15 wherein said immunogen is a pathogen antigen, a cancer-associated antigen or an antigen linked to cells associated with autoimmune diseases.

17. The recombinant vaccine of claim 16 wherein said immunogen is a pathogen antigen.

18. The recombinant vaccine of claim 17 wherein said recombinant vaccine is a recombinant vaccinia vaccine.

19. A method of inducing an immune response in an individual against an immunogen comprising administering to said individual a recombinant vaccine of claim 17.

20. A live attenuated pathogen comprising a nucleotide sequence that encodes one or more proteins of selected from the group consisting of: Fos, c-jun, Sp-1, Ap-1, Ap-2, p38, p65Rel, MyD88, IRAK, TRAF6, IkB, Inactive NIK, SAP K, SAP-1, JNK, interferon response genes, NFkB, Bax, TRAIL, TRAILrec, TRAILrecDRC5, TRAIL-R3, TRAIL-R4, RANK, RANK LIGAND, Ox40, Ox40 LIGAND, NKG2D, MICA, MICB, NKG2A, NKG2B, NKG2C, NKG2E, NKG2F, TAP1, TAP2 and functional fragments thereof.

21. A method of immunizing an individual against a pathogen comprising administering to said individual the live attenuated pathogen of claim 20.